

free-space (16) between the gas outlet wall (8) and the unperforated wall (15), for the passage of a part of the gas leaving said catalytic bed (6) through said portion of the gas outlet wall (8) facing said free-space (16);


C1 providing means for closing an upper end of said free-space (16) between the unperforated wall (15) and the gas outlet wall (8), in proximity of the upper end (8a) of the wall (8), preventing thereby a bypass of said catalytic bed or a recycling to the catalytic bed of the gas entering and leaving the reactor, respectively.

2. (Amended) The method according to claim 1, characterised in that said unperforated wall extends for a portion corresponding to 5%-50% of the length of said gas outlet wall (8).

3. (Amended) The method according to claim 1, characterised in that said free-space (16) has a thickness between 0.5 and 10 cm.

4. (Amended) The method according to claim 1, characterised in that said unperforated wall (15) is supported by said gas outlet wall (8)

C2 5. (Twice Amended) The method according to claim 4, wherein said gas outlet wall (8) has a diameter smaller than the diameter of said gas inlet wall (7) and of said unperforated wall (15), characterised in that said unperforated wall (15) is supported by a gas-tight horizontal baffle (17) which protrudes above the upper end (8a) of said gas outlet wall (8), and rests on the same.

 6. (Amended) A heterogeneous synthesis reactor comprising:
an external shell (2);
at least a radial or axial-radial catalytic bed (6), provided with a gas inlet perforated
cylindrical wall (7) and a gas outlet perforated cylindrical wall (8), extended in said shell (2);
characterized in that it further comprises in said catalytic bed:
an unperforated cylindrical wall (15) coaxial to said gas outlet wall (8) in said catalytic
bed (6), said unperforated cylindrical wall (15) extending from an upper end (8a) of said gas
outlet wall (8) for a portion of the same and for a predetermined length, so as to define a free-
space (16) between the gas outlet wall (8) and the unperforated wall (15), for the passage of a
part of the gas leaving said catalytic bed (6) through said portion of the gas outlet wall (8) facing
said free-space (16);
means of closing said free-space (16) between the unperforated wall (15) and the gas
outlet wall (8), in proximity of the upper end (8a) of the latter, preventing thereby a bypass of
said catalytic bed or a recycling to the catalytic bed of the gas entering and leaving the reactor
respectively.

C2 7. (Amended) The reactor according to claim 6, characterised in that said
unperforated wall (15) extends for a length corresponding to 5%-50% of the length of said gas
outlet wall (8).

8. (Amended) The reactor according to claim 6, characterised in that said free-
space (16) is substantially annular and has a thickness between 0.5 and 10 cm.

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9. (Amended) The reactor according to claim 6, characterised in that said unperforated wall (15) is supported by said gas outlet wall (8).

10. (Amended) The reactor according to claim 9, wherein said gas outlet wall (8) has a diameter smaller than the diameter of said gas inlet wall (7) and of said unperforated wall (15), characterised in that said unperforated wall (15) is supported by a gas-tight horizontal baffle (17) which protrudes above the upper end (8a) of said gas outlet wall (8), and rests on the same.